

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1. (Currently Amended) A method of applying a wear resistant coating material to a surface (22) of a piston ring (1), said method comprising the following steps,

application of said coating material by a thermal spray process,

heat treatment of said coating material at an elevated temperature and for a time effective to at least partially diffuse said coating material into the underlying surface, by exposing said material to heating temperature below the melting point of the coating material,

and apply an additional coating material layer (24) subject to successive heat treatments of each said coating material layer (24) in order to lay down on said piston ring surface (22) a plurality of layers (24) of same said coating material, wherein said resulting piston ring coating has a porosity of between 1 to 15 vol%.

Claim 2. (Original) A method according to claim 1, wherein said piston ring (1) is moved relatively to a thermal spray device (3) and a heat treatment device (5) while applying said coating material (4) and heat treatment to said piston ring (1).

Claim 3. (Currently Amended) A method according to ~~any one of claims 1-2~~
claim 1, wherein said piston ring (1) is rotated about its axis, in relation to a thermal
spray device (3) and a heat treatment device (5), while continuously applying said
coating material (4) and heat treatment.

Claim 4. (Currently Amended) A method according to ~~any one of claims 1-3~~
claim 1, wherein said heat treatment of said piston ring (1) is provided by induction.

Claim 5. (Currently Amended) A method according to ~~any one of claims 1-4~~
claim 1, wherein said resulting piston ring coating has an evenly distributed porosity.

Claim 6 (Canceled).

Claim 7. (Currently Amended) A method according to ~~any one of claims 1-6~~
claim 1, wherein said resulting piston ring coating comprises open pores (23).

Claim 8. (Currently Amended) A method according to ~~any one of claims 1-7~~
claim 1, wherein each of said coating material layer (24) typically has a thickness of
between 0.005 to 0.4 mm.

Claim 9. (Currently Amended) A method according to ~~any one of claims 1-8~~
claim 1, wherein said coating material is of pulverulent type when fed to said thermal
spray process.

Claim 10. (Currently Amended) A method according to ~~any one of claims 1-8~~
claim 1, wherein said coating material has a wire-like form when fed to said thermal
spray process.

Claim 11. (Currently Amended) A method according to ~~any one of claims 1-10~~
claim 1, wherein said heat treatment ~~result~~ results in necks (23) in contact points
between particles (21) in at least said coating.

Claim 12. (Currently Amended) A method according to ~~any one of claims 1-11~~
claim 1, wherein said coating material comprises a metallic compound chosen
from a group consisting of Cr_3C_2 , Cr_2O_3 and Al_2O_3 .

Claim 13. (Currently Amended) A method according to ~~any one of claims 1-12~~
claim 1, wherein said coating material is a cermet.

Claim 14. (Currently Amended) A piston ring (1) coated with a wear resistant
coating material, by a thermal spray process, ~~characterized in that~~ wherein said wear
resistant coating has been exposed to heat treatment of said coating material at an
elevated heating temperature below the melting point of the coating material and for
a time effective to at least partially diffuse said coating material into underlying
surface, and an additionally applied coating material layer (24) subject to successive
heat treatments of each said coating material layer in order to provide on said piston
ring surface (22) a plurality of layers (24) of same said coating material and wherein
said piston ring comprising necks (23) in contact points between particles (21) in at

least said wear resistant coating, wherein said piston ring coating has porosity between 1 to 15 vol%.

Claim 15. (Original) A piston ring (1) according to claim 14, wherein said piston ring (1) is moved in relation to a thermal spray device (3) and a heat treatment device (5) while applying said coating material (4) and heat treatment to said piston ring (1).

Claim 16. (Currently Amended) A piston ring (1) according to ~~any one of claims 14-15~~ claim 14, wherein said piston ring (1) is rotated about its axis while continuously applying said coating material and heat treatment.

Claim 17. (Currently Amended) A piston ring (1) according to ~~any one of claims 14-16~~ claim 14, wherein said heat treatment of said piston ring is provided by induction.

Claim 18. (Currently Amended) A piston ring (1) according to ~~any one of claims 14-17~~ claim 14, wherein said piston ring coating has an evenly distributed porosity.

Claim 19. (Canceled).

Claim 20. (Currently Amended) A piston ring (1) according to ~~any one of claims 14-19~~ claim 14, wherein said piston ring coating comprises open pores (23).

Claim 21. (Currently Amended) A piston ring (1) according to ~~any one of claims 14-20~~ claim 14, wherein each of said coating material layers (24) typically have a thickness of between 0.005 to 0.4 mm.

Claim 22. (Currently Amended) A piston ring (1) according to ~~any one of claims 14-21~~ claim 14, wherein said coating material is of pulverulent type when fed to said thermal spray process.

Claim 23. (Currently Amended) A piston ring (1) according to ~~any one of claim 14-21~~ claim 14, wherein said coating material has a wire like form when fed to said thermal spray process.

Claim 24. (Currently Amended) A piston ring (1) according to ~~any one of claims 14-23~~ claim 14, wherein said coating material comprises a metallic compound chosen from a group comprising of Cr_3C_2 , Cr_2O_3 and Al_2O_3 .

Claim 25. (Currently Amended) A piston ring (1) according to ~~any one of claims 14-24~~ claim 14, wherein said coating material is a cermet.

Claim 26. (New) A method according to claim 2, wherein said piston ring (1) is rotated about its axis, in relation to a thermal spray device (3) and a heat treatment device (5), while continuously applying said coating material (4) and heat treatment.

Claim 27. (New) A method according to claim 2, wherein said heat treatment of said piston ring (1) is provided by induction.

Claim 28. (New) A method according to claim 3, wherein said heat treatment of said piston ring (1) is provided by induction.

Claim 29. (New) A piston ring (1) according to claim 15, wherein said piston ring (1) is rotated about its axis while continuously applying said coating material and heat treatment.